CLAIMS

1. A reactive chip comprising capture probes fixed on each of three or more vibration areas arranged on a support, the capture probes being able to binding to a target substance.

2. The reactive chip of claim 1, wherein each vibration area has a vibration-generating part having a first electrode and a second electrode between which a piezoelectric/electrostrictive element is sandwiched.

3. The reactive chip of claim 2, wherein the capture probe fixation surface is coated.

4. The reactive chip of claim 2, wherein the support has a thin area surrounded by a thick area and has the vibration-generating part on the upper surface of the thin area.

5. The reactive chip of claim 2, wherein the support has a thin area surrounded by a thick area and has the vibration-generating part on the lower surface of the thin area.

6. The reactive chip of claim 2, wherein a lead wire for each of the first and second electrodes is independent from each other on the basis of each vibration-generating part.

7. The reactive chip of claim 2, wherein a lead wire for one of the first and second electrodes is employed in common.

8. The reactive chip of claim 2, which has a means for measuring a resonance frequency of the vibration area.

9. The reactive chip of claim 2, wherein the surface of the first electrode is a capture probe-fixing surface and the first electrode and the second electrode are connected not only with an alternating-current power source but also with a direct-current power source.

10. The reactive chip of claim 2, wherein the kind of capture probes fixed on a vibration area is different from other vibration areas.

11. The reactive chip of claim 10, which has a means for measuring a resonance frequency of the piezoelectric/electrostrictive element.

12. The reactive chip of claim 10, wherein the surface of the first electrode is a capture probe-fixing surface and the first electrode and the second electrode are connected not only with an alternating-current power source but also with a direct-current power source.

13. The reactive chip of any of claims 2 to 7, which employs an arrangement of three or more vibration areas in a line or four or more vibration areas in a matrix of n $\times$ m wherein n is 2 or more and m is 2 or more, with identical capture probes being fixed in each vibration area in identical lines.

14. The reactive chip of claim 13, which has a means for measuring a resonance frequency of the vibration area.

15. The reactive chip of claim 13, wherein the surface of the first electrode is a capture probe-fixing surface and the first electrode and the second electrode are connected not only with an alternating-current power source but also with a direct-current power source.

16. The reactive chip of any of claims 2 to 7, which employs an arrangement of three or more vibration areas in a line or four or more vibration areas in a matrix of n × m wherein n is 2 or more and m is 2 or more, with a capture probe which binds to a different site of a target substance being fixed in each vibration area in an identical line.

17. The reactive chip of claim 16, which has a means for measuring a resonance frequency of the vibration area.

18. The reactive chip of claim 16, wherein the surface of the first electrode is a capture probe-fixing surface and the first electrode and the second electrode are connected not only with an alternating-current power source but also with a direct-current power source.

19. A method for detecting a target substance which binds to a capture probe, which comprises bringing a labeled target substance-containing sample into contact with the capture probes on the reactive chip of claim 10 while allowing the vibration area of the reactive chip to vibrate followed by terminating the vibration of the vibration area, and detecting the target substance bound to the capture probe using the label as an index.

20. The detecting method according to claim 19, wherein the sample is brought into contact with the capture probes while allowing the vibration area to vibrate and changing the temperature over a time period.

21. A method for detecting a target substance which binds to a capture probe, which comprises bringing a target substance-containing sample into contact with the capture probes on the reactive chip of claim 11 while allowing the vibration area of the reactive chip to vibrate followed by detecting the target substance measuring the change in the resonance frequency of the vibration

area as an index.

22. The detecting method according to claim 21, which comprises bringing the sample into contact with the capture probes while allowing the vibration area of the reactive chip to vibrate and changing the temperature over a time period followed by detecting the target substance continuously measuring the change in the resonance frequency of the vibration area as an index.

23. A method for detecting a target substance which binds to a capture probe, which comprises bringing a labeled target substance-containing sample into contact with the capture probes on the reactive chip of claim 12 while allowing the vibration area of the reactive chip to vibrate followed by terminating the vibration of the vibration area, followed by applying a negative charge to a first electrode as a capture probe-fixing surface for a certain time period, followed by detecting the target substance bound to the capture probe using the label as an index.

24. A method for detecting the affinity of each of different target substances to a capture probe, which comprises bringing different labeled target substances into contact with the capture probes on the reactive chip of claim 13 while allowing each vibration area of the vibration surfaces of the reactive chip arranged in an identical line to vibrate at different amplitudes followed by terminating the vibration of the vibration areas and detecting a degree of the affinity of each target substance binding to each respective capture probe toward the capture probe using the label as an index.

25. The detecting method according to claim 24, wherein the sample is brought into contact with the capture probes while allowing the vibration area to vibrate and changing the temperature over a time period.

26. A method for detecting the affinity of each of different target substances to a capture probe, which comprises bringing the different target substances into contact with the capture probes on the reactive chip of claim 14 while allowing the vibration areas of the reactive chip arranged in an identical line to vibrate at different amplitudes followed by detecting a degree of the affinity of each target substance toward each capture probe measuring the change in the resonance frequency of the vibration area as an index.

27. The detecting method according to claim 26, which comprises bringing the sample into contact with the capture probes while allowing the vibration area to vibrate and changing the temperature over a time period followed by continuously detecting the presence or absence of the target substance measuring the change in the resonance frequency of the vibration area as an index.

28. A method for detecting the affinity of each of different target substances to a capture probe, which comprises bringing different labeled target substances into contact with the capture probes on a reactive chip of claim 15 while allowing each vibration area of the vibration surfaces of the reactive chip arranged in an identical line to vibrate at different amplitudes, followed by terminating the vibration of the vibration area, followed by applying a negative charge to the first electrode as a capture probe-fixing surface for a certain time period, followed by detecting a degree of the affinity of each target substance binding to each respective capture probe toward the capture probe using the label as an index.

29. A method for detecting a mutation in a target substance, which comprises bringing a labeled target substance-containing sample into contact with the capture probes on the reactive chip of claim 16 while allowing the vibration areas of the reactive chip arranged in an identical line to vibrate,

followed by terminating the vibration of the vibration area, followed by detecting the target substance bound to the capture probe using the label as an index.

30. A method for detecting a mutation in a target substance, which comprises bringing a target substance-containing sample into contact with the capture probes on the reactive chip of claim 17 while allowing the vibration areas of the reactive chip arranged in an identical line to vibrate, followed by detecting the presence or absence of the target substance measuring the change in the resonance frequency of the vibration area as an index.

31. A method for detecting a mutation in a target substance, which comprises bringing a labeled target substance-containing sample into contact with the capture probes on the reactive chip of claim 18 while allowing the vibration areas of the reactive chip arranged in an identical line to vibrate, followed by terminating the vibration of the vibration area, followed by applying a negative charge to the first electrode as a capture probe-fixing surface for a certain time period, followed by detecting the target substance bound to the capture probe using the label as an index.